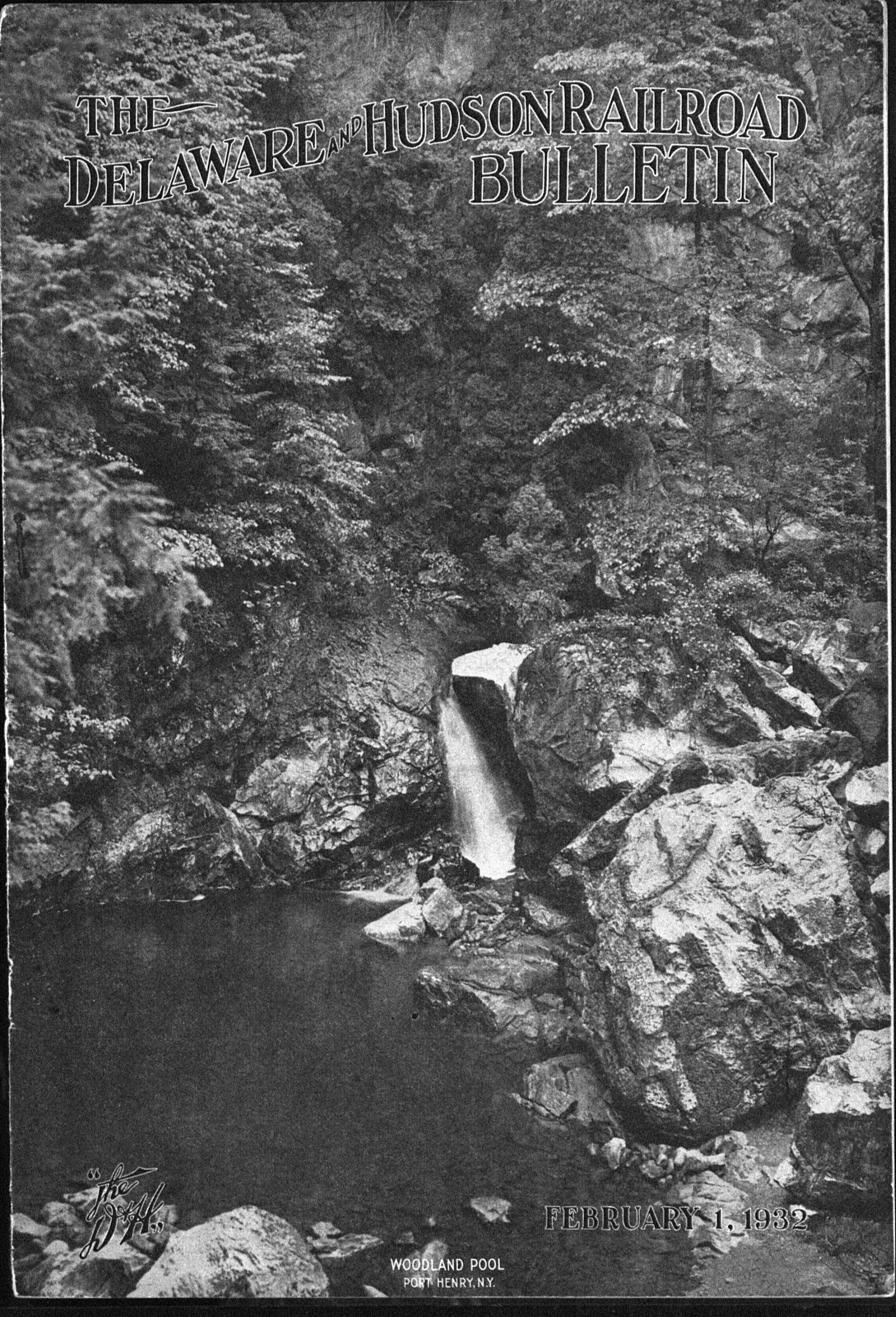
THE DELAWARE AND HUDSON RAILROAD BULLETIN

"the D&H"

FEBRUARY 1, 1932



WOODLAND POOL
PORT HENRY, N.Y.

Abraham Lincoln

HIS mother had no well trained nurse
The day that he was born;
The snow lay deep, the blizzard howled,
That bitter, frozen morn.
He had no toys, no wooden men,
To teach him how to play;
He listened to the birds the while
He worked from day to day.

He had no first grade reader, nor
A warm well-lighted school;
'Twas from his mother's lips he learned
The Master's Golden Rule.
His only church was mother's knee,
And yet this awkward tike
Was known afar as Honest Abe
By friend and foe alike.

He learned to write his A-B-C's
With shovel for a slate;
He had few books and yet he rose
To head this mighty State.
A dozen times he lost the vote
To other public men,
And yet he had the stubborn will
To rise and run again.

He won his cause but lost his life—
This man of lowly birth—
That government of all for all
Might not pass from the earth.
All but the greatest souls are lost
As age on age rolls by—
Yet Lincoln shines with brighter light
In fame's eternal sky.

—P. N. STORM.

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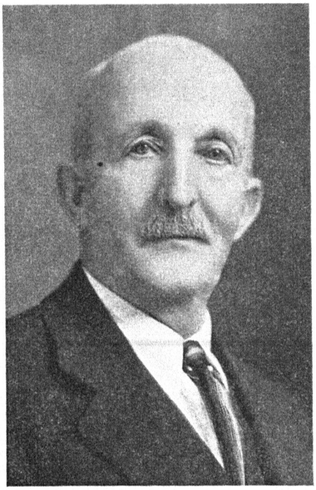
The
DELAWARE AND HUDSON RAILROAD
CORPORATION
BULLETIN

Stopped Runaway Engine

Quick-witted Conductor Prevented Accident and Saved Engineman's Life



DON F. FIRMAN

WHAT would you do if you were standing at the end of a heavily laden train, on a steep grade, and saw a runaway engine hurtling toward you? Such was the experience of Don F. Firman, retired dean of Susquehanna Division conductors, many years ago on Harpursville hill.

In charge of a work train stationed at Bainbridge while the maintenance of Way forces were working near Belden, Mr. Firman told his engineer to go to Tunnel for water just before their orders expired at noon. After filling his tank the engineman started to back to his train. He had gained considerable momentum when he told the fireman to set the hand brakes on the tender—this all happened before air brakes came into use. When the brakes failed to hold, Engineer Fred Spencer reversed the engine. The throttles then in use had a small thumb screw to hold them in place. When he reversed the engine and opened the throttle, Mr. Spencer forgot to set the screw tightly. Suddenly the throttle snapped open and both cylinder heads were blown off.

From then on it was a wild ride down the mountain. Both the fireman and trainman jumped but the engineman stayed with his locomotive.

Mr. Firman heard the report as the cylinder heads blew out and in an instant he guessed what had happened. Leaping up on the work train he released the brakes. Immediately the cars started down the hill ahead of the engine which was gaining on them rapidly.

The locomotive struck the train just south of Harpursville without doing any damage. Mr. Firman quickly set up the brakes and the runaway was soon stopped—halted by him single-handed.

Both of his parents died while he was still a boy and he, with two brothers and three sisters, was left to shift for himself. At nine years of age he went to work for a farmer near Cooperstown for $3 per month. Two summers were spent on another farm at $6 monthly. In the succeeding years he worked for various farmers in the vicinity at wages ranging from $10 to $20 per month.

In 1875 Mr. Firman was initiated into railroading as a trainman on the New York Central, running betweeen Little Falls and the De Witt yards at East Syracuse. At Utica he suffered his only permanent injury in 55 years as a railroader. While making a link and pin coupling his left index finger was crushed; however, it healed, without amputation, although one joint remained stiff thereafter.

Superintendent C. D. Hammond gave MR. FIRMAN his first position on the Delaware and Hudson as a trainman at Oneonta. He saw Mr. Hammond on September 19.1877, and went to work the following day, making his first trip with engineman M. I. Dimmock on the 88, a Mogul, from Oneonta to Nineveh and return.

In those days there were only two tracks in the Oneonta yard for southbound and three for northbound cars, in addition to a single freight house track. Yard switch engines were unknown; the crews made up their own trains. The largest cars were eight-wheel low side gondolas carrying from 10 to 12 tons. Diminutive four-wheel "Jimmy" cars carried only six tons, and 26 cars made a full train.

The "Jimmies" had brake handles on the side, the brakes being set by pressing down the lever. When the brake was set, a ratchet would catch. However, it took a wary brakeman to release the brakes without getting hit by the handle.

MR. FIRMAN was in charge of the first train to be double-headed northbound out of Oneonta. The regular conductor, when he heard that two engines were to be used, laid off. Although many railroad men doubted the practicability of double-heading, MR. FIRMAN'S crew experienced no difficulty in handling the train. Today double-heading is the rule rather than the exception. Furthermore, ten modern cars will carry as much as 40 old-time "Jimmies."

Most of MR. FIRMAN'S later years of service were spent on local freight trains operating out of Oneonta to Albany, Sidney, Delanson, and Binghamton. Early in his career he tried passenger train work, but soon gave it up for the caboose of a local freight.

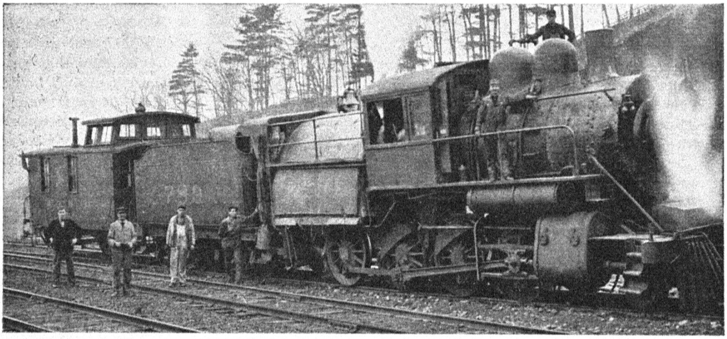
MR. FIRMAN now makes his home at 25 Myrtle Avenue, Oneonta, N. Y.

Inside Dope

TWO hunters were out after a bull moose. At noon they spread their luncheon, but neglected to keep their guns close. Suddenly a big moose sprang out of the woods and charged them. One hunter leaped into a small tree, and the other dived into a hole in the rocks. The moose charged the man in the tree, but couldn't quite get him, so he turned and charged the man who was coming out of the hole. The man went back, and the moose turned and again charged the man in the tree. The second man again came out of the hole, and the moose again charged him. This happened several times. Then the man in the tree yelled, "You blamed fool, why don't you stay back there in the hole?"

"You don't know as much about this hole as I do," was the excited reply: "there's a bear in there!"—*Rays of Sunshine.*

A. & S. Way Freight Engine and Crew



MR. FIRMAN *is second from the left of the group on the ground*

Home Taught Fears

Nature Teaches Us To Fear Only Two Things: Noises and Falling

FAR and away the most conclusive tests of character ever made, since Adam and Eve reared Cain and Abel and made a moral success of one boy and a moral failure of the other, were the elaborate studies recently undertaken by Dr. Hugh Hartshorne of Columbia University and Dr. Mark A. May, psychologist of Yale. These Scientists tested the character attitudes of over 10,000 school children from about 8 to 16 years old, under *normal* school and home conditions. The children did not even know they were being scientifically studied. The net result of these intricate and reliable tests was to show that among agencies having the greatest influence in building human character, the *home* outweighed the school, the church, the Sunday school, the movies and sports *all combined.*

Now it seems that there are three phases of home life out of which are developed the emotional patterns or habits which will make boys and girls into self-reliant men and women, able to meet an imperfect world with high ideals of their own. These phases are, first, the attitude between husband and wife; second, the attitude of sisters and brothers toward each other; and third, the attitude of parents toward children. Let us then take a look at the way in which these home attitudes foster the one emotional attitude which affects our lives more than any other and extends as a sort of back-ground through nearly all the others. This is self-confidence as opposed to fear—not fear of some special thing but a rather generalized fear of life itself.

Vast numbers of people who will face death on a moment's notice who go through all sorts of real dangers without a quaver, have yet a sort of underlying fear of life's possibilities that seldom leaves them. It is easy to fall into these generalized fears, and there are thousands of ways in which parents actually teach this state of mind to their children. One of the amazing discoveries made by doctors during the draft examinations in the World War was that so many perfectly healthy young men had all their lives been convinced that they had heart or kidney trouble or some similar malady and had feared to undertake arduous occupations for that reason. In nearly all cases their fears had been started by hearing symptoms discussed at home.

But what *is* fear anyhow? Well, the scientists have done a world of work in the last 30 years on fear and they find there are three distinct kinds. The first is natural or biological fear—the kind that preserves you from natural perils; the second is intelligent or constructive fear—the kind you get from sound, healthful education; and the third is pathological fear—destructive fear that comes from a wrong view of life, from wrong comparisons of yourself with other people, from wrong attitudes toward your job, and from telling yourself constantly you are not as important as others. As a rule there are just three people who ever tell you you are no good—your parents, your brothers, or sisters, and yourself. And nine times out of ten you have begun to tell yourself you are no good because your mother or father or brother or sister in some way first destroyed your self-confidence.

For example you hear many people assert they are naturally afraid of lightning or burglars or something of the sort. This is not true, because there are but two things that people are "naturally afraid of." The first is a loud noise and the second is the sense of falling. Dr. John Watson and his students have tried in hundreds of ways to frighten babies, but these are the only two ways in which they have succeeded.

Many mothers say, "My child has always been afraid of the dark." Oh, no, she *taught* it to be afraid. She put the babe to bed and went out and slammed the door, or talked loudly, or scolded or dropped a basin on the floor. Or, when it got a little older, she talked about being afraid of the dark herself, or told the child something dreadful that was likely to happen in the dark.

And it is just this way that you teach children to be afraid of life. A friend recently spoke of moving to a college town to educate his children. I asked him if this was a matter of economy. "No," he replied, "but I think parents ought to be near their children to protect them from the temptations with which college life surrounds them." Bosh! I would like to preach to parents on the many ways in which they actually teach their children to be afraid of life by shielding them from responsibility. They are missing the greatest educational opportunity this world offers when they fail to put as much responsibility on the child as he can reasonably carry *just as early in life as is possible.*

In this way you build up habits of success instead of habits of failure, courage habits instead of fearing life and dodging its responsibilities.

This has nothing contrary to the duty of teaching children the second kind of fear—intelligent fear—which is merely teaching them good judgment in avoiding dangers and destructive habits. This kind of fear is merely the negative side of character building and should be carried through to the constructive or positive side—that is, to the development of ideals and ambitions, of goals to be reached and battles to be won. The greatest duty of parents is to fill their children's minds with the belief that they can meet these duties and battles with satisfaction and success.

When intelligent fear is carried to the point of exaggeration it becomes the third fear—diseased or pathological. I know a woman who has gone through all sorts of real dangers—surgical operations, a fire, even running a burglar out of the house with a gun—and yet her life is just one long agony of fear as to what the neighbors will think of her. She is not as good as they are in one way or another. And the worst of it is she has taught her children the same attitude.

The way out is to develop logical judgment of our own powers and those of our friends. When this is done honestly, when you think *in detail* of your own powers of body and mind and compare them with these same qualities in others, you will be astonished to find that you are superior in most respects to the very people you have taught yourself to be afraid of.

But the great lesson is that all these attitudes, both destructive and constructive, are chiefly developed in the home. A study issued by the University of Chicago, of over 60,000 delinquents and criminals, has shown that nearly all this wayward conduct is the outgrowth of emotional trends taught in the home And since we have seen that Nature has given us but two inborn fears, and that all others are learned, and since the home is the greatest agency in the world for teaching all our emotional attitudes, it seems that the very largest question every family should answer is, "Are we as parents or brothers and sisters teaching ourselves and one another to meet life with fear, self-depreciation and doubt, or are we trying to be daily inspirations to one another to meet life with the self-confidence and good cheer that calls out each one's best energies?"

Your answers to these questions will have more effect on the happiness and success of every member of your family than anything that ever has been or ever will be taught in school or college.—A. E. WIGGAM in *Better Homes and Gardens*.

Veterans Re-elect Officers

AT the annual business meeting of The Delaware and Hudson Veterans' Association, held in Odd Fellows' Hall, Albany, Sunday afternoon, January 10, President H. N. ATHERTON, Green Ridge, Pa., Secretary W. J. HILL, Elsmere, N. Y., and Treasurer F. H. BAKER, Carbondale, Pa., were unanimously re-elected to serve another one year term.

The special train from Wilkes-Barre reached Nineveh with nearly 200 Pennsylvania Division veterans aboard; additional delegations were picked up at Susquehanna Division points, and, together with the delegates from the north end, the assemblage totalled 400 or more by the time the meeting was called to order.

Following the recitation of the Lord's Prayer, the singing of *America*, and the reading of the minutes of the previous meeting, the report of the secretary was presented. Secretary HILL advised that the total membership of the organization at present is 1,486; 28 members having died in 1931 and 158 applications for membership having been received.

A program of entertainment was presented under the direction of F. L. HANLON, Supervisor of Wage and Working Agreements, including: selections by The Delaware and Hudson Quartet, Messrs. KEEFE, HEFFERN, RHUTZ, and CLICKNER; piano solos by Paul Vanston; violin solos by John McNamara accompanied by Frank McNamara; duets by EDWARD DILLON and JAMES BRITTON; piano solo, Frank McNamara; and tap dancing by Kenneth Goddard accompanied by Paul Vanston.

Brief addresses were given by Colonel J. T. LOREE, Vice-President and General Manager, and John Draney, President of the Delaware, Lackawanna, and Western Railroad Veterans' Association.

The Lamp Guard

An old countryman, who had been to London for the first time on business, returned in a bad temper.

"At the hotel," he complained, "they kept the light in my bedroom burning all night. I couldn't get a wink of sleep."

"Why didn't you blow it out?"

"Blow it out," said the old man. "I couldn't. It was in a bottle!"

The Rimutaka Incline

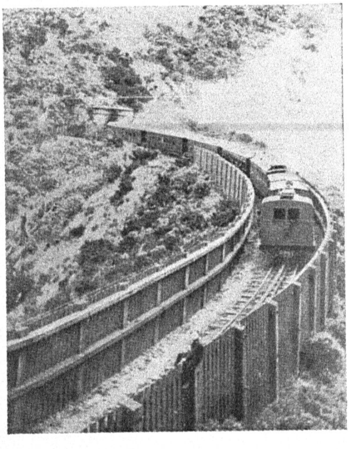
By A. P. GODBER

Reprinted from The New Zealand Railways Magazine

IN the mountain regions between Wellington, the capital city of New Zealand, and the Wairarapa Plains, is a short connecting link of railway which is unique in the railway world. It has the distinction of being the only section of railway in the two hemispheres which is operated on the "Fell" center-rail system, with steam locomotives. This link in New Zealand's railway system is known as the "Rimutaka Incline," and, because of the special locomotives and cars used to work trains over it, and the interesting features of the permanent way, it presents many points of interest to both the railway engineer and the ordinary traveler.

The length of the incline is three miles. In that distance the line rises from Cross Creek (the station at the foot of the incline), no less than 971 feet to the station at the top, appropriately named the Summit. Curves of 500-foot radius are a predominating feature. The longest piece of straight track, about a quarter of a mile in length, has been facetiously dubbed "The Long Straight." Three tunnels have been pierced, the length of the longest (situated at the end of the Summit yard) being 1947 feet. The average grade is one in fifteen (which can also be expressed as a six and one-half per cent grade, or three hundred and fifty-three feet to the mile), and one or two short stretches have a grade of one in eleven.

At times northerly winds sweep with hurricane force down the narrow gullies, and during the early days of operating the Incline, these winds constituted a real menace to the safe running of trains. A mishap caused directly by the wind, occurred in September, 1880, when three cars were blown completely off the line where it crossed a deep narrow gully named, not inaptly, "Siberia." On that occasion, even the heavy tool boxes, which were not bolted down, were blown off the engine.

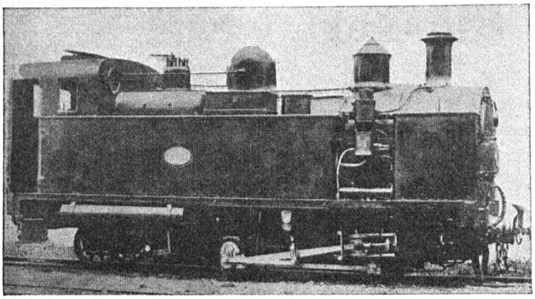


Scene of the accident of 1880, when a train was blown over the Incline. Massive breakwinds now render a similar accident most unlikely

Describing the mishap, Mr. J. Hosie, then the fireman (now a retired engineman), stated, so great was the force of the wind, that, except by crawling on his hands and knees, and hanging on to the center rail for support, he was unable to traverse the rest of the way across the gully. Eventually, he reached the Summit and help was forthcoming. Since that mishap massive timber breakwinds have been erected at the more exposed positions of the Incline, and travel over this part of the system is now as safe as anywhere else in the Dominion.

The method of traction on mountain railways of other countries is mostly by some system of rack-rail. Herein the Rimutaka Incline differs, in that traffic is operated solely by adhesion. In between the usual parallel rails, at a height of some six and one-quarter inches, is the center rail. This is a double headed rail mounted on its side, on heavy longitudinal timbers which, in turn, are securely fastened to brackets bolted to the ordinary transverse ties.

The center rail commences at the top end of the Cross Creek yard and has its termination some distance inside the south portal of the Summit tunnel. To assist the



Class "H," Fell Locomotive in use on the Rimutaka Incline, North Island, New Zealand

drivers in locating the latter end of the rail a gong is placed on the tunnel wall, twenty feet from the end of the center rail. This gong is operated through treadle motion, by the wheels of passing vehicles.

The "Fell" locomotives are used exclusively for this section of railway. These engines have a total weight of 39 tons. Their construction and operation are most interesting.

These engines are carried on six wheels of a diameter of 32 inches. The two leading pair of wheels are coupled, and the trailing wheels constitute a radial bogie, situated under the cab. The coupled wheels, which have outside bearings, are driven by cylinders fourteen inches in diameter by sixteen-inch stroke. The steam pressure is one hundred and sixty pounds per square inch. Four of the locomotives have Stephenson valve gear, and two are fitted with Joy's patent valve gear, all of which are outside the frames.

At the base of the smokebox are placed the inside cylinders, twelve inches in diameter by fourteen-inch stroke, which actuate the center engine. This portion of the engine's anatomy presents much out of the common. The inside cylinders drive on to two vertical axles, and these, in turn, are coupled to two other axles, by suitable rods and pinion wheels. These vertical axles work in axle-boxes placed in the cross frames. Keyed to the lower ends are cast steel gripping wheels, having a flat tread. Sufficient play is allowed in the axle-boxes to permit of the gripping wheels being brought into compression against the center rail for the "up" trip, or being swung clear for the "down" trip.

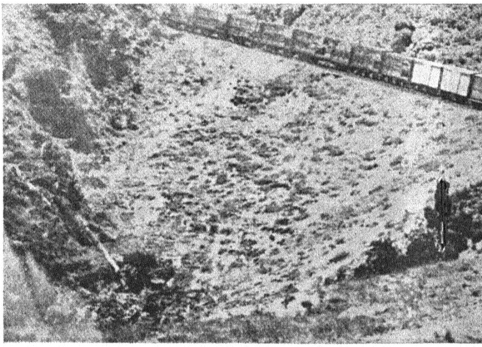
This is accomplished by means of powerful compression springs, operated from the engine cab. In addition to the ordinary Westinghouse brake, the engines are equipped with four cast iron shoes on suitable levers, which can be compressed against the center rail, pressure being applied by means of rods and screw in the usual manner.

It is, of course, very necessary that the speeds of the outside and inside engines should synchronize when hauling trains up the grade. The drivers are now very expert at synchronizing engine speeds.

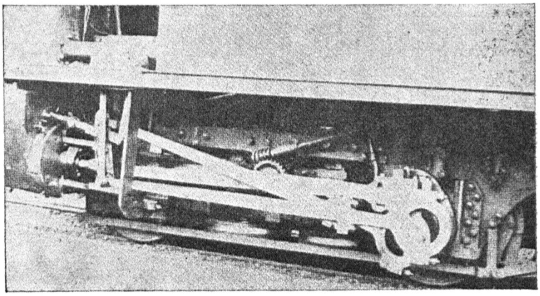
Special four-wheeled brake vans are attached at the rear of all trains ascending the Incline, the number of vans to be attached varying with the load. When trains descend the incline the vans are placed at the front end of the trains, next to the engines.

The special brake gear consists of four massive upright cantilever arms, pivoted on the floor of the van. The lower ends, to which are bolted cast iron brake shoes, reach low enough to engage against the center rail.

The upper ends are forked, and work in guides on the sides of gun metal nuts, which, in turn,



Descending 1 foot in every 15 on the In move in or out from the center of horizontal shafts (screwed with right and left hand threads), running in suitable bearings.

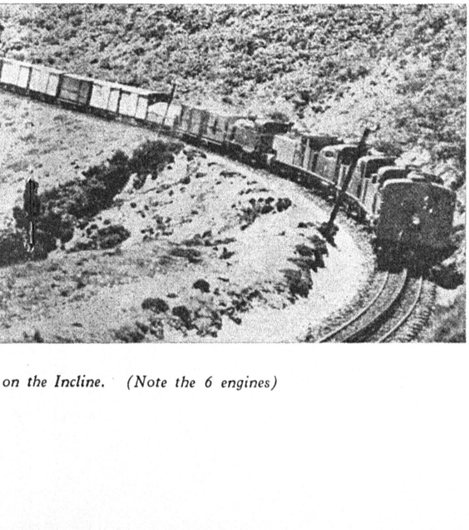


Fell Locomotive, showing valve gear (for outside engine), the Gripping Wheels and Compression Gear

A large hand wheel is keyed to the center of these screwed shafts, and, according to the direction in which the wheels are revolved, so the cantilever arms press the brake shoes against the center rail, or move them away from it. So severe is the service demanded of this braking system that a set of blocks rarely lasts more than one trip down the Incline.

Let us watch the operation of a train about to negotiate the trip up the hill. The practice is for each "Fell" locomotive to be placed at the head of its respective load. When a train arrives at Cross Creek the train engine is detached and the leading "Fell" engine couples on and draws its load up to the commencement of the center rail, against which the center engine grip wheels are compressed.

The second engine next couples on to its load and then draws ahead to couple up with the first portion. In like manner a third, or fourth "Fell" engine will be attached to their loads, the requisite number of "Fell" vans placed on the rear of the train, the whole coupled up, the Westinghouse brake tested throughout the train and then the train starts off on its three-mile climb.



on the Incline. (Note the 6 engines)

As the second and successive engines reach the center rail, the inside engine is put into operation. The speed of trains on the "up" journey is necessarily slow, being five miles per hour. The speed on the downward trip is also slow, for obvious reasons, averaging about ten miles per hour.

Close fitting doors and windows are provided on all engines to minimize the discomforts of smoke and exhaust steam when passing through the tunnels. The carriage lamps are lighted during the same period.

At the sound of the gong in the Summit tunnel, the pressure of the gripping wheels is released, the wheels are swung clear and the inside engine ceases operation. After arrival in the Summit yard the "Fell" engines and brake cars come off the train, which is then made up into one portion, and is ready to continue the journey to Wellington.

"Safety First" is rigidly enforced in the working of this part of the railway system. Immediately after the departure of a train up the Incline the points of a runaway siding at the bottom of the grade are opened and not again set for the main line until the whistle of a descending train is heard.

Telephones are situated at a number of points on the Incline, so that in case of a breakdown to a vehicle, prompt notice can be given to the station at the top or bottom of the Incline. Considering the natural difficulties encountered and the arduous nature of the work of operation, it is a tribute to the efficiency of the officials and men of this section that no mishaps have occurred on the Incline since 1880.

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He Begs No More

I GAVE a beggar from my little store
Of well earned gold;
He spent the shining ore
And came again and yet again—
Still cold and hungry as before.
I gave a thought, and through that
Thought of mine
He found himself—
The man, supreme, divine!
Fed, clothed and crowned with
Blessings manifold,
And now he begs no more.

—*From "The Persian."*

On With the Job

LITTLE sympathy need be poured out on politicians who object to public criticism. These men are in office because they implored the people to put them into office.

They went up and down the land telling the people what good men they were and the wonders they could accomplish if the people would only put them into office.

They pleaded with men and women to vote for them so that they might have their heart's desire—a chance to run the country.

Was there a problem too great for them to solve? Nothing of the kind. Only give us a chance, they said, and we will show you that the fellows whose jobs we want are not half as smart as we are.

They told the people that if the people did not put them into office the country would go to the dogs completely.

Well, then they got what they wanted—a chance to be in office—let them take what is coming to them. They pleaded loudly enough to be put there. If it is trouble they are now having, they asked for trouble. The people would never have put them there if they had not been implored to give them a chance.

So let our men in office shut up and get on with their jobs. If they are half as smart as they said they were a word of criticism cannot slow down the functioning of their powerful intellects or rear an obstacle which they cannot surmount with the wave of a hand.

This goes for Tories, Grits, Farmers, Independents, Reds, Blacks or Whites who may have craved office—and got what they wanted.—*The Leader Post* (Regina, Sask., Canada.)

How Much Freight?

HOW much freight is there in an overcoat or a suit of clothes? This intriguing question led to an investigation a few years ago into the transportation cost of assembling a complete outfit of men's wearing apparel at Springfield, Ill., a centrally located mid-western city. The study was recently brought up to date by the Illinois Central System in cooperation with one of the largest men's furnishing stores in Illinois. It shows that a man who buys a complete outfit—from hat to shoes—in the stores of Springfield, Ill., may spend from $75 to $175, but only 27.7 cents of it goes to pay the cost of shipping the various articles of attire by freight train from the cities where they are manufactured.

The analysis reveals that the railroads receive less than 11 cents for carrying an overcoat from Rochester, N. Y., to Springfield, a distance of more than 700 miles, and only slightly more than 5 cents for carrying a suit of clothes the same distance. The freight cost on a hat from Philadelphia to Springfield, more than 900 miles, is less than 3 cents, and on a pair of shoes from Boston to Springfield, more than 1,100 miles, it is less than 5 cents. The railroads get less than 2 cents for carrying a union suit from New York City to Springfield, a distance of about 1,000 miles, and only slightly more than 1 cent for carrying a shirt 980 miles from Glens Falls, N. Y., to Springfield.

The remaining articles to complete the outfit, including collar, necktie, socks, belt, garters, buttons and handkerchief, are carried from New York and New Jersey cities to Springfield for about 1¼ cents.

Traitor Dollars!

By SAMUEL CROWTHER

Reprinted from "Ladies Home Journal"

THESE are national bargain days. Money will buy more in good, sound merchandise than for many years past—in some cases it will buy more than it did before the war. The price level is down—very far down. Probably it is at the bottom. Many articles are being sold at considerably less than cost. This is a buyer's market.

The situation of today has been the situation of other years. There are few new factors. Those who then faced the facts and acted in accord with them came through better off. Those who quaked with fear and hid their money came out losers.

Those who have now exchanged their reason for fear are hoarding about a billion and a half dollars. They are robbing the country of more than fifteen billions in credit money—enough to make business good and employment general.

Indirectly they are robbing themselves, for the welfare of all of us depends upon the state of business. Also they are as directly robbing themselves as though they picked out a third of their money and burned it.

To understand why all this is so, it is only necessary to know a little about money—what it is, what it does, and how it comes into being.

Money

A dollar, to most people, is money.

If that dollar buys more than usual, prices are said to be low; if it buys less than usual, prices are said to be high.

When times are hard the advice is always to save. But these are exactly the times when not to save. Money which is hoarded during hard times, when prices are always low, will diminish in value, for when prices advance it will buy less. Prices are now very low, but undoubtedly will rise—that is to say, money will soon purchase less than it does now. Those who are hoarding money are going to have a great awakening.

The antics of money and prices are always mysterious. Indeed, some of them cannot be explained even by those who set up as authorities. But at a time when almost every man and woman is full of doubts and fears, we may make the subject somewhat clearer by trying to answer the more common questions that arise.

Money is usually defined simply as a medium of exchange developed to take some of the inconvenience out of barter. If a man, for a day's work, is given a sack of wheat when he needs shoes and not wheat, he must hunt up a shoemaker who is willing to trade shoes for wheat. It simplifies matters to pay the man in some commodity which is imperishable, takes up very little space, and will be accepted as having an exchange value.

The important function of money is to fix a standard of value; otherwise it would be impossible to have prices.

If, by edict, all debts had to be paid on a particular day in money, the country would be paralyzed, for the payment of one transaction depends upon the payment of another.

It is work and buying that keeps things moving. Our national wealth is, at current figures, about four hundred billion dollars. Nevertheless, if we stopped work and divided up everything, we could exist less than half a year.

Wealth

Only a fraction of our wealth is in consumable shape. Our retail trade, which represents what we consume, runs about sixty billions a year. Our total bank clearings, representing the total of check transactions, are now about seven hundred billions a year. We do all this business on around five and a half billion dollars in currency and fifty billions in bank deposits.

Business proceeds in a kind of lock-step formation. The purchase of a ten-cent cake of soap starts a great number of wheels in motion—the druggist pays his bill to the wholesaler, the wholesaler pays the manufacturer, and so on back to the raw-material people.

The druggist does not actually send on the dime. He may pay his soap bill by borrowing from the bank or he may already have paid it out of his other sales or his working capital. In any event there is a long lapse of time between the buying of the raw material and the selling of the cake of soap. But every transaction in the chain has to be paid for out of the sale to the consumer. And the consumer can buy only because someone has paid him—he, too, is part of a chain.

The lapse of time between manufacture and sale makes credit necessary. Someone always owes someone else. There is never enough money for it to be otherwise. The employer is the debtor of the workman until pay day. The railroad company is the debtor of the passenger the instant he has paid his fare.

Credit

Credit is a promise to pay.

The money that we use, as will later be explained, is largely founded on credit. Without credit there could be little or no business. The whole of banking is concerned with dealing in credit.

We generally think of money as a bill or a coin, but in this country our principal money is the bank check. But, remembering that the principal function of money is to express price, anything that will serve to make an exchange at a price will answer all the purposes of money.

Gold was early adopted in some countries as an exchange metal because of its convenience, and gradually nations made their standard of value a certain weight of gold of a certain fineness.

In theory, a country on the gold standard uses only gold as currency, and if a bank note be issued, the full face value of the bill is deposited in gold to redeem it on demand. Actually the gold standard merely means that gold may be had on demand.

There is in the whole world only seven billion dollars' worth of gold for currency uses. So keeping to the gold standard is largely arranging affairs in such fashion that gold will not be demanded.

However, when a nation imports more than it exports, and gold is required to settle the differences, a difficult situation may arise unless the gold can be replaced. England found that the effort to replace the gold that was being drained out was not worth while, and, for the time being, has gone off the gold standard. This means that British debts will be paid not in gold but in promises to pay.

Banking

A bank is not just a place in which to deposit money. The main business of a commercial bank of deposit is to deal in credit. These credits are the money which we largely use in our daily transactions. Thus it is evident that the great function of a bank is manufacturing money. Let us see how this actually works.

If A owes $100 for wheat he bought from B and B owes $100 for cotton he bought from C and C owes A $100 for wool, the three of them can discharge their obligations by swapping their debts.

Dealing in such debts was the beginning of banking. A prosperous merchant would help out smaller men by buying their notes either for cash or in exchange for his own notes, and by arranging times of payment he could use over and over his own cash and the funds that people deposited with him. He could be solvent so long as he always had on hand enough cash to pay whatever funds the depositors demanded or whatever of his own notes became due. Through experience he learned how much would be demanded of him on any day and kept only that on hand.

A skilled banker can lend, unless the law prevents him, up to twenty or thirty times the cash he ever had on hand and still meet every engagement. The loans he makes serve actually as money. Thus a bank creates money.

If you discount a note at a bank the bank does not commonly hand out money. It credits your account with the amount that you borrow less the sum taken as discount—that is, the bank just makes a bookkeeping entry. You can draw out your balance in cash or you can pay it out by check.

(To be concluded)

Hard Times?

WHEN Abraham Lincoln was a young man, he was a candidate for the Legislature of Illinois, and was badly defeated. He next entered business, failed, and spent seventeen years of his life paying up the debts of a worthless partner. He was in love with a beautiful young woman, to whom he became engaged—then she died. Entering politics again, he ran for Congress, and was defeated. He then tried to get an appointment to the United States Land Office but failed. He became a candidate for the United States Senate, and was defeated. In 1856 he became a candidate for the Vice-Presidency, and was once more defeated. In 1858 he was defeated by Douglas. One failure after another—bad failures—great setbacks. In the face of all this, he eventually became one of the greatest men of America, whose memory is loved and honored throughout the world.

When you contemplate the effect of a series of setbacks like this, doesn't it make you feel rather small to become discouraged just because you think you are having a hard time of life?—*The Commonwealther.*

Elephants

THE newspapers recently carried an item describing how "Lizzie" the elephant, pride of the Philadelphia Zoo, after suffering all night with a tooth-ache, extracted the offending molar with her trunk and placed it on the floor of her cage where it was found by the keeper the next morning.

A high degree of intelligence is shown by these huge creatures which grow wild in the Congo region of Africa, also in India and Ceylon.

The principal difference between the African and Asiatic elephant is the size of his tusks. Nature has developed these for digging purposes. In India and Ceylon where food in abundance is provided above ground, the tusks are usually quite short; while in Africa, where they are needed for digging edible roots, they grow to considerable length. The largest pair of tusks of which there is a definite record averaged 230 pounds each.

Perhaps because of his vegetable diet, or possibly because of his ability to defend himself against attack, the elephant has no enemies in the animal kingdom. It is seldom that they fight among themselves, although occasionally they engage in terrific struggles butting and thrusting with heads and tusks.

Elephants travel in herds. It has been established that these are family groups. Each has its leader—often a female—to whom the herd looks for guidance and leadership. In the event of an injury to the leader others will support and assist it to a place of safety, where grass poultices are applied to its wounds. These dressings are changed regularly until the wounds heal. Although dangerous when wounded, elephants will usually run away from pursuers. There are cases on record where a wounded elephant has, however, pursued its tormentor into the center of a native village, trampled him to death, and fled into the neighboring jungle.

"Rogue" elephants are those which have become separated from their own herds or families. Under the elephantine code of morals they cannot associate with other herds but must lead a solitary existence, which naturally tends to develop a morose disposition. The worst rogues are those that have escaped after a period of domestication during which they have been employed in lumbering or other industries where man has given them a "higher education." Upon becoming "outlaws" they are capable of all sorts of mischief.

Shakespeare seemed to believe, as did others of his time, that the elephant had no knee joints. This is not so. An elephant can lie down and get up much more easily than a horse. The agility of the great beasts is proven by the finding of their tracks on mountain peaks which man can climb only with considerable difficulty. The elephant is conscious of his great weight and will carefully test any bridge before attempting to cross.

Like the camel the elephant can go for long periods without water and has the power of expelling water from his stomach through his trunk at will.

The fear of mice on the part of the elephant is said to be due to the possibility of getting into his sensitive trunk and cutting off his breathing.

The commercial production of ivory is the principal value of the elephant to us, despite his use as a beast of burden in India. The world's supply of ivory comes from the Congo in Africa. In the nineteenth century Arab raiders forced the natives by every conceivable cruelty to deliver their accumulations of ivory.

When no more was to be had the luckless blacks were sold as food to neighboring cannibal tribes in exchange for more ivory. Other slaves carried the booty to the sea-coast, but one in five surviving the horrors of the march. There they were sold, along with the ivory, for shipment to America. Without the ivory the slave trade did not pay!

Fortunately this is past and gone and the ivory trade is now under government regulations.

Want an Index?

A FEW copies of the *Index* to *The Bulletin* for 1931 are still available for free distribution to our readers. The *Index* contains lists of all Illustrations, Poems, and Prose Articles contained in Volume 11. Address requests to "Supervisor of Publications," The Delaware and Hudson Railroad Corp., Albany, N. Y.

The Kindly Stranger

"Where's the car, Dad?" asked the son of an absent-minded professor.

"Why, dear me, I really don't know," he said, scratching his head in an effort to recall the past. "Did I take it out?"

"You certainly did. You drove it downtown this morning."

"Well, now, that is quite remarkable," said the professor. "I remember now that after I got out I turned 'round to thank the gentleman who had given me the lift and wondered where he had gone!"—*Detroit Motor News.*

Save the Railroads!

IF a number of persons were marooned on an island somewhere out of sight of land, and if one of the men had a boat—somewhat battered and leaky, but still a boat—would not the others help patch up the craft which they knew was their single hope of escape?

The parallel of the men on the island and the American people waiting for the railroads to recover is not exact, but it will do. There are other means of escape, but there is none which would be so quick and effective as to help the railroads get started.

One may object that he does not love the railroads; that they were an arrogant set back in the days of Vanderbilt; that they charged high rates and committed various acts back in grandfather's time. Well, the man who owns the boat may chew tobacco, and use profane language; he may have committed every depredation on the calendar; but at the present moment his boat is the only means of escape from the desert island. What would you do under the circumstances?

Common sense and expediency dictate to forget the past, to look to the present, to anticipate the future; to use every means at hand to help patch the thing up. If there is a carpenter among the marooned men, the rest have the right to insist—nay, even to compel him to use his best ingenuity to stop the leaks and make the boat seaworthy. If some of the marooned men happen to have materials that might go to stop some of the leaks, the law of humanity would commandeer them.

* * *

Railroads in normal times spend from one billion to one and one-half billion dollars a year in buying new equipment. Why, the rails alone which are worn out in one normal year and have to be replaced would, if laid end to end, build a railroad thousands of miles long. To make new rails to replace these, would set the steel mills running full time.

Railroads in normal times pay out billions in wages. In 1929 the pay envelopes of the railroads contained $2,941,000,000. In 1931 they contained $2,145,000,000—a falling off of some twenty-seven per cent. These wages support six millions of our people. This takes no account of the wages which the steel mills, the locomotive works, the car works and all the other industries pay out in normal times.

The railroads' plant and equipment represent an investment of $26,000,000,000. On this valuation the railroads pay in taxes about one million dollars a day. When it comes to railroad taxes, do not think of them as something far off in Montana and Arizona: think of them right here at home.

Take Glenville, for instance: through it operate the Delaware and Hudson, the New York Central, and the Boston and Maine railroads. The assessors' books will tell you how high a valuation is placed on them, and the tax collector will tell you how much those three corporations alone contribute toward building the schools, paving the roads, eliminating the overhead crossings, and meeting the other town expenses. Take the railroads out of Glenville, for example, and estimate how much more the individual taxpayers would have to pay.

By all means, let's not kill the goose that lays so many golden eggs. By all means, let's feed the goose so it can keep on laying more and bigger eggs.

But this is not all:

Who owns these railroads that are in such a plight? Everybody owns them. Do not think of them as the property of William H. Vanderbilt and Jay Gould and a few other millionaires. That was true 75 years ago, but not now. You own them now, you and every other person who has a life insurance policy.

Five billion dollars' worth of railroad bonds are owned by life insurance companies. So long as these bonds are good, your life insurance is good.

Savings banks own some fourteen billion dollars' worth of railroad bonds. So long as these bonds are good your savings are secure.

But the railroads cannot continue to pay a million dollars a day in taxes; they cannot pay interest on their bonds; they cannot buy locomotives and steel rails and electrical devices and a billion dollars' worth of other supplies, unless they earn the money.

Let's help them get up steam! In helping them, we shall be helping the whole country. Most of all, we shall help our own industries.—*Schenectady Union-Star*.

Finally

So live that after the minister has ended his remarks, those present will not think they have attended the wrong funeral.

Clicks from the Rails

Conductor Thwarts Bandits

While passing from one car to another passenger train conductor W. J. McCarthy, of the Erie, was confronted by two bandits, one carrying a revolver. Just as the train slowed down for the stop at River Street, Paterson, McCarthy stepped back quickly and slammed the car door in the face of the desperadoes. This act so unnerved the bandits that they leaped from the train. After telephoning the police Conductor McCarthy calmly continued to collect tickets as if nothing had happened.

✣

Largest Miniature Railroad

The largest miniature railroad in the world is located in an apartment house in Washington Heights, N. Y. Over a mile of track makes up the various routes followed by the diminutive cars. School boys come to the apartment weekly to study railroad operating problems. The line is complete with cars, locomotives, stations, tunnels, bridges, signals, and a telegraph train dispatching system.

✣

Commutes 63 Years

One passenger at least has not forsaken the Lackawanna for busses. Addison H. Day is now in his sixty-third year as a regular commuter between Chatham, N. J., and New York. When Mr. Day started commuting there was no such thing as a commuter train. The journey was then made by stage from Chatham to Oranges, and thence by mail train to New York.

✣

Collects Railroad Facts

Howard Small, retired locomotive engineer of West Medford, Mass., spends his time collecting photographs and data on railroads, and pasting them into scrap books. This hobby helps to keep Mr. Small active and in good health.

"John Bull's" Birthday

The "John Bull," one of America's first steam locomotives, celebrated its one hundredth birthday by spinning its wheels—nothing more. Compressed air was pumped into the cylinders to make the wheels revolve while the engine rested on blocks. The historic locomotive is now on exhibition in the Smithsonian Institution, Washington, D. C.

✣

Lioness Checked

The baggage room force in the Paris railroad station faced a perplexing problem recently when a lioness and her cub were checked for three days at ten cents a day. The animals were a birthday gift of a young man in the French colonies to a young lady. When they arrived their future mistress had not been able to have their cage finished, and they were checked until their future home was ready.

✣

Miniature Station

In order to keep track of the cars being loaded at the New York Railway Express agency terminal, Agent J. J. McDermott designed and built a shallow wooden tray with grooves to represent the various station tracks. Into these slots he inserts small blocks each marked with the destination city of the car it represents and the time of departure of the train to which it is to be attached. In this way he is able to see just where each car is at all times and direct the make-up of his trains.

✣

Traveling Fish

Three cars have been designed to carry live carp, buffalo, and suckers from Lansing, Iowa., to the eastern markets. The fish are stored in an artificial pond until ready for shipment. Fifty persons are employed at Lansing to catch and load the fish. Each car will carry fifteen tons of live fish in the winter months.

Flying Rattlesnakes

While driving a track motor car on the New York Central near Elmo, Pa., J. F. Leimgruber overtook a large hawk which was flying low. Getting to his feet, Mr. Leimgruber struck at the hawk as he passed under it. To his astonishment a rattlesnake, more than three feet in length, dropped from the hawk's claws and fell across the controls of the car. Fortunately, the snake was badly injured and it was a relatively safe and simple matter to knock him overboard.

✣

Alertness Rewarded

Six boys ranging in age between ten and thirteen years, recently rode over the Jersey Central in business car 999 as the guests of three officials of the railroad. Before the trip was over F. T. Dickerson, Secretary and Treasurer of the company, presented a $20 gold piece to each. This was their reward for having found a broken rail in the Jersey Central's track at Plainfield and reporting it to officials just before a passenger train was due.

✣

"The 999's" Fireman Dead

John B. Elmore, the man who fired "the 999" on the historic trip of the Empire State Express which set the world's speed record in 1893, is dead. Mr. Elmore, an engineman at the time of his death, had just completed his run on the crack Commodore Vanderbilt a few hours before his demise. In 1893, while firing for Engineman Charles Hogan, they reached 112.5 miles per hour near Crittenden, N. Y. Trains have since traveled up to 120 miles an hour.

✣

Dies to Save Dog

In a vain effort to save her pet dog from the wheels of an approaching passenger train at her crossing, Mme. Lemont, crossing tender at Saint-Meen-le-Grand, France, was killed by the engine.

Liberty

LET every American, every lover of liberty, every well-wisher to his posterity swear by the blood of the Revolution never to violate in the least particular the laws of the country, and never to tolerate their violation by others."

ABRAHAM LINCOLN (1837).